

WE CLAIM:

Sub B1
Sub D17

1. ~~A reticle sorter coupled between a reticle storing system and one or more photolithography exposure tools, comprising:~~
one or more locations each capable of holding a cassette having slots for reticles; and
a sorting system capable of retrieving the reticles from and inserting the reticles into the slots in order to sort the reticles within the cassette.

2. The reticle sorter of claim 1, further including a controller coupled to the sorting system for controlling the sorting of the reticles according to a command from a host system.

3. The reticle sorter of claim 1, further including a location for holding a reticle, wherein the sorting system may place a selected reticle on the location during a sorting operation.

4. The reticle sorter of claim 1, wherein the sorting system includes an arm with claws for grasping edges of reticles.

5. The reticle sorter of claim 1, further including an inspection system, coupled between the one or more bays and an input port of the reticle sorter, for inspecting a characteristic of each reticle.

Sub D2

6. The reticle sorter of claim 5, wherein the inspection system includes a video camera coupled to a display device for presenting a visual image of a reticle.

7. The reticle sorter of claim 5, wherein the inspection system includes a tool for measuring an amount of dust on a reticle.

8. ~~The reticle sorter of claim 5, wherein the inspection system includes a tool for detection flaws in a reticle pattern.~~

9. ~~The reticle sorter of claim 5, further including means for moving each cassettes from the input port to one of the one or more bays.~~

See pg 11
10. ~~The reticle sorter of claim 1, wherein the sorting system includes two or more docking locations.~~

See pg 11
11. ~~The reticle sorter of claim 10, wherein the sorting system can move reticles between a first cassette in a first one of the two or more docking locations and a second cassette in a second one of the two or more docking locations.~~

12. The reticle sorter of claim 1, including three or more bays.

13. A semiconductor fabrication facility, including:
a plurality of photolithography exposure tools;
at least one reticle storage system including a buffer for storing cassettes;
and
one or more reticle sorters each associated with a group of one or more of the exposure tools, each reticle sorter including one or more docking locations each capable of holding a cassette having one or more reticles and sorting system for accessing and sorting reticles within each cassette. --

14. The fabrication facility of claim 13, wherein the facility includes multiple reticle sorters at least one of which is associated with multiple exposure tools.

15. The fabrication facility of claim 13, wherein the one or more reticle sorters each send and receive cassettes to and from the associated group of one or more exposure tools and the reticle storage system.

17. A method of sorting cassettes in a semiconductor fabrication facility, comprising;

associating a group of one or more photolithography tools with a reticle sorter;

periodically moving one or more cassettes to the reticle sorter and sorting reticles within the one or more cassettes; and

periodically moving the one or more cassettes to a reticle storage system for storage.

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B2